



THE COMMONWEALTH OF MASSACHUSETTS
WATER RESOURCES COMMISSION

Meeting Minutes for June 8, 2000

Commission Members in Attendance:

Peter C. Webber	Commissioner, Department of Environmental Management
Lee Corte-Real	Designee, Department of Food and Agriculture
Richard Butler	Public Member
Ron Sharpin	Designee, Metropolitan District Commission
Marilyn Contreas	Designee, Division of Housing and Community Development
Francis J. Veale	Public Member
Karen Pelto	Designee, Department of Fish, Wildlife and Environmental Law Enforcement
Bob Zimmerman	Public Member
Mark P. Smith	Designee, Secretary of Environmental Affairs
Joseph E. Pelczarski	Designee, Coastal Zone Management
David Rich	Public Member
Gary Clayton	Public Member
Arleen O'Donnell	Designee, Department of Environmental Protection

Others in Attendance:

Steve Garabedian	USGS
Duane LeVangie	DEP
Linda Marler	DEM, Office of Water Resources
Vicki Gartland	DEM, Office of Water Resources
Michele Drury	DEM, Office of Water Resources
John Magenheimer	DEM, Office of Water Resources
Mike Gildesgame	DEM, Office of Water Resources
Dan Garson	Woodard & Curran
Dan Donovan	Mansfield Selectman
Lou Wagner	MAS
Eileen Simonson	WSCAC
Richard Friend	Woodard & Curran
Larry Silverman	New Bedford Aquarium
Jackie Murphy	EOEA
Richard Thibedeau	DEM
Dave DeLorenzo	DEP SERO
John D'Agostino	Town of Mansfield
David McCarter	Town of Mansfield
Lee Azinhiera	Town of Mansfield
Kurt Gaffney	Town of Mansfield

Doug Reed	Woodard & Curran
Bill Whelan	New Bedford Aquarium
Ray Smith	New Bedford Aquarium
Gerry Studds	New Bedford Aquarium

Agenda Item #1: Executive Director's Report:

- Smith introduced Jackie Murphy who recently has joined EOEA as the Assistant Director of Water Policy. Jackie's background includes working previously at EOEA in the Watershed Initiative and with various environmental nonprofits in Florida as well as working with EPA in consulting roles. She will be helping with WRC work and other EOEA water policy work. She will initially be working on the outdoor water use project with Mike Gildesgame and Nina Danforth.

- Smith next gave an update on the outdoor water use project. Water suppliers feel that peak demands and high water use in the summer are major issues. At the initial meeting, discussion included a plan to address outdoor water use. This will feature getting educational materials to the general public and opinion leaders, technical assistance to water suppliers and a review of how this issue is dealt with on a regulatory level. The group is trying to develop an outreach component early enough for use this summer. The next meeting, to share research, will be scheduled in the next few weeks. The focus of the outdoor water use work group will be lawn watering. This is what really causes the problem of peak demands. Water suppliers are looking for support from the state. The extent that we help them raise the visibility of the issue helps at a local level.

- Smith announced that EOEA is holding two events:

Biodiversity Days: EOEA is organizing field trips this weekend to get people out in their communities to look at and start documenting the biodiversity of the community. There will be world renowned experts, such as E.O. Wilson, participating, as well as local citizens and students. Ultimately catalogues of biodiversity will be developed by community so people understand what's there and what we need to protect. This is a first of a kind event nationwide

Southeast "Supersummit": Next Saturday in the Southeast Region, Secretary Durand will be holding a "supersummit" on community preservation. All the buildouts have been done for the SE region. Representatives from all 51 communities of SE Massachusetts are invited to a meeting at Middleborough High School next Saturday from 9-noon. We will look at the buildouts on a regional basis and brainstorm priority issues such as housing, environmental issues, traffic, etc. We are working with EOTC and Economic and Community Development.

- The ACOE is holding "listening" sessions around the country to determine the sort of services they should be providing to the states. There is one scheduled for June 18th in Waltham. We plan to participate. Smith stated that if WRC members have issues they want discussed, they should let him know.

- Smith announced that EOEA is moving. DEM has already moved from the Saltonstall Building and is housed temporarily at the Transportation Building. New telephone numbers

were distributed. EOEA moves on June 23rd to Causeway Street. DEM will be moving there this fall. EOEA has same phone numbers. DEM has temporary phone numbers.

- Pelczarski, the EOEA coordinator with MEMA, briefed the commission on a tanker spill of 50,000 gallons of #6 fuel oil in Boston Harbor.
- Magenheimer gave the current conditions report. Things look better after the recent storm, however, the rainfall amount from this storm was not included in May totals included in this report.
 - Precipitation is near normal for the state. The highest levels are reported in the Connecticut River Valley. The precipitation excess increased from 0.11 to 0.58 inches statewide. May precipitation was 100% of normal. The Southeast region was 82% of normal and the Central region was 86 % of normal. The Northeast, Connecticut River and West all received above normal precipitation. The precipitation deficit was eliminated or significantly reduced.
 - Groundwater levels overall are near normal. The Central region's levels are a bit higher, but the eastern Cape is still below normal. However, the groundwater deficit for the eastern Cape has been reduced. The summer of 2000 is looking better due to the ample spring rains.
 - Surface water flows are overall near normal, and in some areas above normal. Reservoirs are in good shape.
 - Drought indices indicate moderate to wet conditions. The National Weather Service is forecasting near normal temperatures and precipitation for the coming month. La Nina is weakening. We may be expecting an above normal hurricane season.

Smith asked if the National Weather Service's long-term projection was still for a warmer drier summer. Magenheimer replied that there was still potential for it to be drier, but they are not predicting it to be significantly drier than normal. Marler added that there could still be some dry months, but they are predicting hurricanes to start in August. Smith stated that the impacts of a dry summer are likely to be less because of the wet spring.

Agenda Item #2: Updated Community Water Conservation Plan:

Levangie stated that since the last WRC meeting, he had spoken with Dave Rich about the issues of duplication of information submittals and more clarification of water audit. Levangie then outlined the items where there had been questions. Some of the questions that seem duplicative are not available in all forms to everyone reviewing permit applications, so some duplication is necessary. There was some discussion about the unaccounted-for water definition. It was taken from the 1999 IBT Performance Standards, but did not include the definition for "accounted" for water. Rich stated that it was important to have consistent definitions and ways to calculate unaccounted for water. Drury stated that we only define unaccounted-for water, but we could see if the American Water Works Association has a way to calculate this so that there is some consistency. Levangie stated that "Water Audit" should be defined. The current definition was taken from the existing conservation plan. AWWA may have a better definition. He noted that some portions the plan were streamlined.

Rich stated that under pricing, we should only be asking 3 questions: (1) do you recover the full cost of operating your system? (2) do your receipts exceed your expenditures? and (3) what type

of a rate structure do you have? Veale asked if the more expensive water becomes, the more people will conserve. Towns may have the right to use excess revenues in any other area. Rich answered this is correct if they are not on an enterprise system. This is a philosophical question. Rich believes that water expenditures should be offset by water revenues. Increasing water rates will lead to conservation over a short period of time. But then it ceases. Then people use as much water as before and the water system brings in excess revenues. Is it really the business of water suppliers to show a “profit”? Smith agreed that Rich asked the key questions. But additional questions under the billing section are relevant because they make people think about their water use. Some questions here can be combined.

Next steps: Revisit the definition of unaccounted-for water; make final changes; get the draft out in advance of next meeting so people will have time to review and comment; and take a vote at next meeting.

Pelto suggested adding a question about bylaws relative to private wells. Rich stated that Mashpee no longer allows automatic irrigation systems to use public water but hasn't found a way to enforce this retroactively. It is very difficult to administer. Smith noted that this was not the place to address private wells.

Simonson suggested using the Boston Water and Sewer Commission definition of unaccounted-for as the model of how to calculate unaccounted-for water. Drury and Levangie said that this was a problem with Stoughton because it automatically guarantees 15% unaccounted-for water. Simonson said that she was referring to an actual method to calculate unaccounted-for water. Smith said that we'd revisit it. Simonson commented on the interconnection section. There is no indication of what the interconnection might be used for. She also asked how does the 80 gpcd relate to the guidance under the Interbasin Transfer Act and the DEM projection methodology? Drury stated that 65 gpcd is an action level and 80 gpcd is still being used for Method 1 communities. 70 gpcd is a target for Method 2 communities to reduce water use.

Agenda Item #3: Dedham-Westwood Water District streamflow gaging:

Smith reminded the Commission that this was discussed in detail at last month's meeting. Gartland distributed maps of the area and the memo from the last meeting. She gave brief recap of the request from the Dedham-Westwood Water District to change how they monitor streamflow for their Interbasin Transfer approval. They are currently required to shut off their Fowl Meadow Well when streamflow in the Neponset River reached 0.15 cfs, using the Norwood gage, but the well that they are monitoring for is actually quite a distance downstream from this gage. Since the Dedham-Westwood approval, the WRC has also given approval for a well to be developed by Canton in the Neponset River basin. As a condition of this approval, Canton was required to install a gage downstream, near the Fowl Meadow well where there is a potential for cumulative impacts. Canton and USGS identified a potential gage downstream, at the Green Lodge Bridge, near the Fowl Meadow Well. In doing measurements to develop a rating curve for this site, it was noticed that flow here was not proportional to flow upstream. It was three to four times higher than flows at the Norwood gage. However, the drainage area at the Green Lodge site is only two times the drainage area of the Norwood gage site. Dedham-Westwood asked to continue to use the Norwood gage, but be allowed to use a factor of three to

determine when flow at Fowl Meadow was at 0.15 cfs. Staff recommended that this be approved at last month's meeting. The conditions for approval are that:

- The ratio is verified using the gage on the East Branch;
- Once the Green Lodge gaging station is installed, that gage will be used, and use of the ratio will be discontinued;
- DWWD are to check the rating annually by doing measurements and assuring that there haven't been any changes on the river.
- If the gage is not installed at the Green Lodge site, staff will revisit the ratio method to determine if it is still appropriate to use.

V O T E	<p>Butler moved with a second by Corte-Real</p> <p>to approve the staff recommendation on the Dedham-Westwood Water District streamflow gaging.</p> <p>The vote was unanimously in favor.</p>
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Agenda Item #4: Mansfield's Interbasin Transfer Application

Smith noted that a vote on this application is expected at this meeting. This application has been discussed in detail at numerous previous meetings. Questions were raised by the town of Foxborough. Staff will address what has been done to respond to those questions. Commissioner Webber received a letter from Foxborough, which was given to Commission members. A response is being drafted. The response to comments in the staff recommendation also addresses Foxborough's comments. Staff met with Foxborough and Mansfield to assure that they fundamentally agree on the hydrologic characterization of the area. Smith then recognized the town of Mansfield officials and consultants.

Gartland gave an overview of the May 25th meeting between Staff and Foxborough and Mansfield. The purpose of this meeting was to determine whether the consultants agree on the basic hydrology of the site. Staff have stated previously to both consultants that they are not going to tell them how to model the hydrology, however, staff wants them to agree on the hydrological characterization of the area. The key points that were agreed to by both communities include:

- The surface water basin boundary does not consistently act as a ground water boundary.
- There is a fair amount of ground water flow going from Lake Mirimichi, in the Taunton River basin to Witch Pond and the Ten Mile River basin.
- The watershed is about 0.4 square miles and consists of a swamp and stream, underlain by a significant layer of peat. Both consultants agreed that the peat acts as an aquitard, providing a semiconfined condition which limits the amount of water going from surface to aquifer. There is some leakage downward, but it is limited.
- The stream going out of Witch Pond has a very low slope. It is primarily a drainage feature. There is a bedrock control at Interstate Rte 95, downstream of the site. The water in the stream is there from overflow from Witch Pond and rainfall. It does not act like the typical

streams that we review, where there is a significant amount of ground water flowing directly into the stream, maintaining flow. The whole area acts almost like a large pond.

Staff felt that best way to approach this situation was to look at impacts to ground water levels, and specifically impacts to the wetlands, rather than setting streamflow thresholds.

Marler stated that after the April WRC meeting, Staff asked Mansfield to address some technical issues that were raised by Foxborough, specifically those that had to do with the ground water model and water budget. Mansfield requested an extension to address those issues and the Commission granted that request last month. Mansfield did some additional field work to verify the low conductivity peat at the base of swamp, nearest to the Mansfield wells. They also verified a significant degree of hydraulic separation at the edge of swamp nearest the Mansfield wells. They took this information and adjusted their ground water flow model to restrict surface water recharge to the aquifer.

Staff feels the revised model more accurately reflects the hydrologic characterization of the area. The stream is not dependent on groundwater recharge, and the aquifer is not getting significant recharge from the stream. Mansfield performed additional simulations which show slightly more aquifer drawdown than the initial model. However the drawdown was not substantially different. Under normal conditions all wells can operate without triggering the thresholds specified in the March Staff recommendation. However, between 30 and 90 days of no rainfall would trigger the thresholds. The wetlands are not expected to be impacted by well operation. There seems to be buffering by the low conductivity peat and silt. Use of thresholds and a monitoring program can be used to verify expected conditions and limit impacts on the surface water resources. The thresholds stated in the Staff Recommendation are consistent with the conditions actually observed at the site during a dry summer. We do not expect the thresholds to be tripped under normal recharge conditions. Following the baseline observation period, and before Well #10 would go on line, the WRC will have the opportunity to modify the operational conditions and thresholds. Following the first 5 years of operation and monitoring, the WRC will again have the opportunity to modify the operational conditions and thresholds.

Clayton asked the extent to which the concerns raised by Foxborough had been addressed by the current Staff Recommendation. Marler answered that the technical issues have been fully addressed. Procedural issues are being addressed. Veale asked if Foxborough had changed their position. Marler answered that Foxborough has received all the additional information that has been collected since the April meeting. Based on the May 25th meeting, they agree conceptually on the hydrogeology of the area. She said she had spoken to Foxborough's consultant and he said he was more satisfied with the model. Smith said that he had spoken with Foxborough Water Commissioner Joan Sozio, who said Foxborough was concentrating on getting their application in and moving forward with their well.

Clayton asked how often 30/60/90 day no recharge conditions occur. Marler replied that Mansfield has a rain gage at the Witch Pond Well site which has collected data for about 24 years. Data from this gage indicates that a 30 day no recharge condition may occur in one out of five years. Marler does not expect that the shut-off threshold will be tripped every summer, but it could be tripped at the end of a dry summer. Clayton asked what this meant for the White

Cedar swamp. Marler answered that Atlantic White Cedar swamps require seasonal inundation and an annual spring flood and that they need a near-to surface water level. Atlantic White Cedar swamp experts in the state were consulted and they told staff they expect that at the end of summer, the water levels in the swamp would generally be within one meter of the surface (approximately 3 feet). The Mansfield recommendation is more conservative, allowing only one foot of drawdown in the wetland because of this well. This wetland system is subject to impacts by precipitation. It is very flashy. Rain will continue to provide the seasonal inundation. Last summer, which was severely dry, there was still water within four inches of the wetland surface at the end of August. The hydraulic separation seems to maintain water levels even though Well #6 has been pumping for the last 20 years.

Gildesgame added that the monitoring conditions are significant and extensive and designed to identify any changes in the water level and the vegetative makeup in the swamp. Smith stated that drawdown is occurring in the aquifer. Staff don't expect drawdown in the swamp. Staff think that the ability of the swamp to hold water and keep it near the surface will be maintained. The thresholds that are likely to be tripped are those in the aquifer which will prevent them from drawing the aquifer so far down that leakage from wetland will occur. This recommendation will protect the swamp. In addition, the recommendation requires that if for any reason water in wetlands goes below one foot of the surface, Mansfield will shut off the well. Clayton stated that Foxborough was rather direct on the issue of the permeability of the peat layer or lack thereof. Smith stated that while there was some question about the extent of the peat and silt layer, there were more questions about how it was modelled. Mansfield did modify their model, resulting in somewhat greater drawdowns in the aquifer, but the Staff Recommendation is based on both the empirical data that was collected and the modelling results. The new information didn't change the results to such a degree that staff now thinks that there will be an impact on the swamp. In addition, the original thresholds have not been changed based on the new information.

Marler passed around samples of the peat and silt taken from the vicinity of the Mansfield well. She stated that one of the problems with the original model was that Mansfield's consultants did not model the swamp area with the lowest conductivity that they could have to represent the silt layer. This was because they did not know exactly how continuous it was, although the data suggested that it was continuous for the most part. They did additional soil sampling in the swamp. Some samples were collected at the edge of the Atlantic White Cedar Swamp nearest to existing Well #6. She noted that the samples with silt were very plastic. She noted that the samples of the shallow peat were very wet and loose. The samples of the deeper peat contained a lot of silt and were not as permeable as the shallow peat. Field tests of deeper peat indicated low permeability. The base of peat contains enough silt or is compact enough to act as an *aquitard*. As a result of these findings, Woodard & Curran modified the model by expanding the area and lowering the conductivity of the silt layer. Staff concurred that the model adjustment was justified.

Gartland stated that everything in the Staff Recommendation was double checked, based on Foxborough's comments and the new information collected by Mansfield. Staff wanted to make sure that everything was still valid. Smith stated that this is a well documented Staff Recommendation. DeLorenzo wondered if a response for the record was forthcoming from

Foxborough. Smith said that they did not indicate that they would be responding. Foxborough stated that their focus was on their own application.

O'Donnell thanked staff and all participants on such a good job. Staff are using aquifer drawdown as a surrogate to measure impacts on swamp. There is a provision for a specific monitoring program for Hessels Hairstreak butterfly and the spotted turtle in the recommendation. There's a link further on (Criterion #5, Condition #5) which states that if there are negative alterations to the habitat, it then triggers DEP through the Water Management Act permit to further restrict pumpage of the well. If DEP is charged with restricting pumpage, she would like the WRC to be consulted if the Water Management Act permit is called on to restrict pumping. She requested amendment to this condition to say "in consultation with the Water Resources Commission".

Simonson asked if Mansfield's conservation program was adequate. Drury stated that Mansfield had an extensive conservation program, with only a few slight deficiencies. These are outlined in the Staff Recommendation, with certain conditions to address the deficiencies. Mansfield has committed to meet all conditions.

V O T E	<p>Corte-Real moved with a second by Butler</p> <p style="text-align: center;">to approve the application for an Interbasin Transfer submitted by the Town of Mansfield with the conditions as contained in the Staff Recommendation of June 8, 2000 and with the addition to the end of Condition #5 of Criterion #5, the words "in consultation with the Water Resources Commission".</p> <p>The motion passed with 10 in favor and 2 opposed.</p>
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Agenda Item #5: New Bedford Aquarium

Veale introduced the members of the New Bedford Aquarium Board. Congressman Studds, the director of the Aquarium, stated that it has been a dream within New Bedford to bring an aquarium to the city to help the economy and to highlight New Bedford's rich maritime heritage. The dream has been delayed due to the expense of the project. About a year ago, William Whelan, chairman of Spaulding and Slye, a major developer in Boston, who is a New Bedford native and resident, asked to help out. He is now the chairman, CEO, and guiding force of the Aquarium Corporation. The aquarium will be called an "oceanarium" and will tell the story of the oceans of the world. It will be a unique institution unlike anything ever built, with marine research capabilities and links to other institutions (Woods Hole etc). Whelan stated that it was an exciting project that is six years into its conception. It is going to cost \$80-100 million by time it is completed and will be one of the largest aquariums in the world holding 1.5-2 million gallons of water in its tanks. It will be a living laboratory. New Bedford's economy was built on whaling. Now we need to find a way to protect our oceans.

Roger Paine, a noted whale expert, and the Oceans Alliance will be headquartered at the aquarium. They are looking at the opportunity of tying in with Woods Hole and the Marine

Biological Institute to form a coalition between them and private enterprise to create new industries in New Bedford and Massachusetts. They hope to create a very strong education component which will help the public to feel a connection back to the oceans and understand the problems taking place and tie the waterfront back into the city of New Bedford. Silverman stated that partnerships are key and they see the aquarium as a tool for public participation.

Webber stated that a smaller scale model for this is at DEM's Waquoit Bay Research facility. It has a broad citizen education program and targeted education to translate the research (watershed, estuarine, environmental) that happens there to local decision makers so that they can factor it into their day-to-day decisions. He suggested that the aquarium board contact them to see how they've done it and begin to create a partnership between this institution and the aquarium. Smith stated that this project hits on Secretary Durand's themes of community development, reuse of existing structures, bringing jobs to areas that need them and can support them, and environmental education. Smith stated that he welcomes the opportunity to look for partnerships. O'Donnell added that there are a lot of things that we could do to explain about the limits of water resources in the commonwealth. She suggested that the WRC brainstorm and get some ideas back to them.

O'Donnell also asked about aquaculture. Silverman said that the Center for Marine Science and Technology has quite an aquaculture program. They are looking at restocking and are interested in aquaculture that will feed fish processing plants. Whelan stated that one of their partners is Roger Berkowitz from Legal Seafood. They know that one of our problems is that our fisheries are being overfished and some species are being eradicated. We need to figure out how we are going to have sustainable fisheries. Some of the best scientist in the world are members of the coalition. We need to get them together with the business men who understand the commercial end of it

Webber suggested they look up Conte National Wildlife Refuge in Turners Falls where there is a live camera on an eagles' nest that is linked to the Visitor's Center and local cable and schools.

Agenda Item #6: Stressed Basins

This item was stricken from the agenda because there is no new report.

Agenda Item #7: Drought Management Plan

Smith referred to the last meeting when Gartland gave an overview. He distributed a Draft Final State Drought Management Plan and asked for comments by the end of the month. This report is about how the state provides a coordinated response to drought.

Meeting Adjourned

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